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10/630,332	07/30/2003	Hyesook Hong	TI 35165	8758

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EXAMINER	
POMPEY, RON EVERETT	

ART UNIT	PAPER NUMBER
2812	

NOTIFICATION DATE	DELIVERY MODE
09/13/2007	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

uspto@ti.com  
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# Office Action Summary

Application No.

10/630,332

Applicant(s)

HONG ET AL.

Examiner

Ron E. Pompey

Art Unit

2812

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 6-19-07.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-18 and 20 is/are pending in the application.
- 4a) Of the above claim(s) 1-8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9-18 and 20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 9-12, 15, 18 and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Kent (US 6130016).

Kent discloses the limitations of:

providing a reticle layer over a reticle substrate, said reticle layer including:

a pattern area (220, fig. 3a) area; and

a test pattern area (230, fig. 7) area, wherein a portion of said test pattern area is within a step-distance of a portion of said patterned area (col. 6, lns. 14-40);

patterning a material by stepping said reticle ; and

visually inspecting said material for light and dark regions within said test pattern area area, said light and dark regions representing a corresponding variance said patterned area;

wherein said portion of said test pattern area is a first portion of said test pattern area and said portion of said patterned area is a first portion said patterned area and wherein said first portion of said test pattern area is within a step-distance of said first

portion said patterned area and a second portion of said test pattern area is within a step-distance of a second portion of said test pattern area, a variance between said first and second portions of said test pattern area being indicative of a variance between said first and second portions of said test pattern area (fig. 4B);

wherein said test pattern area creates a reflective grating said patterned material and said reflective grating is configured to provide said light and dark regions if said variance in said test pattern area exists;

wherein said reflective grating includes a reoccurring line/space structure;

wherein said variance is a systematic variance in critical dimension (CD) in said test pattern area (col. 6, Ins. 1-10) ;

wherein said patterned resist material is used to form multiple features, and wherein said multiple features are electrically contacted to form an operational integrated circuit (col. 6, Ins. 1-6).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 13 and 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kent (US 6130016), as applied to claims 9-12 above, in view of Ausschnitt et al. (US 5,914,784).

Kent reads on the claims as applied above, but does not disclose the claimed limitation(s) of:

wherein said reoccurring line/space structure has a pitch of less than about  $3/2$  the wavelength in use;

wherein visually inspecting said material includes visually inspecting said material using an optical microscope; and

further including changing a focus on said optical microscope to cause said light and dark regions to become more or less pronounced.

However,

a. Ausschnitt discloses the above claimed limitations regarding:

wherein visually inspecting said material includes visually inspecting said material using an optical microscope; and

further including changing a focus on said optical microscope to cause said light and dark regions to become more or less pronounced in Abstract.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine Kent with Ausschnitt, because the optical microscope helps inspect a patterned material.

It would have been obvious to one of ordinary skill in the art at the time the invention to form test pattern areas with reoccurring line/space structure that has a pitch of less than about  $3/2$  the wavelength in use, since it has been held that where the general conditions, the width of the lines in the reoccurring line/space structure, of a claim are disclosed in prior art, discovering the optimum or working ranges involves only

routine skill in the art. (see *In re Aller*, 105 USPQ 233.) Because the pitch of the test pattern area will help find variances visually.

5. Claim 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kent (US 6130016), as applied to claims 9 above, in view of Asano et al. (US 6741334).

Kent reads on the claims as applied above, but does not disclose the claimed limitation(s) of:

wherein said test pattern area is located in a scribe region defined by said test pattern area

However,

b. Asano discloses the above claimed limitations regarding:

wherein said test pattern area is located in a scribe region defined by said test pattern area (col. 5, lns. 45-60; wherein the patterned chrome is the reflective grating and the scribe region is the peripheral region outside of the pattern region).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify where the test pattern is placed in Kent with placing the test pattern area in the scribe region in Asano because allow you to use more of the wafer for the actual devices.

### ***Response to Arguments***

2. Applicant's arguments with respect to claims 9-18 and 20, filed 10/10/06, have been considered but are but are held not persuasive.

Applicant argues that Kent does not include both patterned feature area and test pattern area within the same reticle, because a calibration reticle is being used.

However, the calibration reticle patterns both the feature and test pattern areas, when calibrating the device for operation. There is nothing in the Kent disclosure that limits the calibration reticle from patterning both the feature and test areas.

Applicant makes a general statement that Ausschnitt does not disclose wherein said reoccurring line/space structure has a pitch of less than  $3/2$  the wavelength. However does not refute the rejection based on case law that is used to address the wavelength limitation. Therefore, the rejection is upheld.

### ***Conclusion***


3. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ron E. Pompey whose telephone number is (571) 272-1680. The examiner can normally be reached on 9AM - 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael S. Lebentritt can be reached on (571) 272-1873. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Ron Pompey  
AU: 2812  
9/4/07

  
MICHAEL LEBENTRITT  
SUPERVISORY PATENT EXAMINER